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ABSTRACT

In this final working paper of the National Seminar on the Diffusion of New Instructional Materials and Practices conference participants make some general observations about the whole process of diffusion that would be useful to others who are developers or users and who participate in dissemination and implementation activities. Consideration is given to these questions: At what point should a developer of curriculum materials begin his diffusion activities? If you were called in as a consultant to a school district, where would you tell them to turn for resource information? How could users more effectively know of their needs? How can teachers (the users) be involved in the development of new products and ideas? Is maladoption of innovations common? Is poor use of innovations common? To what extent is there translation, transformation, and adaptation of innovation during the diffusion process? To what extent do developers create markets for their products as opposed to responding to a demand initiated by the consumer? To what extent does research influence the development of products? What do you consider the major factors influencing diffusion (dissemination/implementation) of innovation in education? Related documents are SO 006 339 through SO 006 344. (SHM)

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NATIONAL SEMINAR ON THE DIFFUSION OF NEW INSTRUCTIONAL MATERIALS AND PRACTICES

Wingspread

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6.0 GENERAL OBSERVATIONS: Do You Have Some General Observations About The Whole Process Of Diffusion That Would Be Useful To Others Who Are Developers Or Users And Who Participate In Either Dissemination Or Implementation Activities Or Both?

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6.0 General Observations: I have two general observations based upon a recent study which I completed. 1) In any curriculum materials development project of any size, diffusion is bound to take place. It is my recommendation that in conceptualizing the developmental program, diffusion should become an integral part of the developmental process. Thus, in budgeting and in personnel planning some priorities should be given to the diffusion activities that would take place along with development. I suspect that in many cases, especially in the last cycle of social studies curriculum development, diffusion was not planned but simply took place anyway. This meant that developers had to split time between developmental activities and diffusion activities perhaps delaying or detracting from product development. 2) Another observation is that development ought not to take place in a separate and distinct environment from the environment in which the product or materials are going to be used. For example, if one is developing a secondary social studies program it is recommended that the program be developed in a high school. The same would be the case for other grade level kinds of programs or products. In this way the developer has easy access to users, and the access to the feedback for the revision process.

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6.0 GENERAL OBSERVATIONS: DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT THE WHOLE PROCESS OF DIFFUSION (DISSEMINATION & IMPLEMENTATION) THAT WOULD BE USEFUL TO OTHERS WHO ARE DEVELOPERS OR USERS AND WHO PARTICIPATE IN EITHER DISSEMINATION OR IMPLEMENTATION ACTIVITIES, OR BOTH?

1. At what point should a developer of curriculum materials (her?) begin his/diffusion activities? Diffusion considerations start at the beginning of the project in the sense that anyone related to the project who is influenced by it, either negatively or positively, will start diffusing information or parts of the program. Developers must be concerned about their image and must decide at the beginning how much information and materials to give out during the early stages of a project. I feel that a relatively free dissemination of ideas and materials is a good idea from the start. Possibly this activity should be organized so that it doesn't take up too much staff time.

6.2 The Social Science Education Consortium, The ERIC Clearning House on Social Studies, etc., the Joint Council on Economic Education, Social Education.

6.4 Involvement of teachers in the development of new products and ideas. Teachers should be involved early through trial use of the materials, critiques, possibly development of materials for those teachers which the developers uncover as talanted creaters of materials. Frequent meetings with teachers, possibly retreats, are useful to get the kind of very specific criticisms and suggestions they have to offer.

6.5 Is maladoption of innovations common? Yes. Sometimes the materials are not used as intended. In other cases, parts of them are pirated, a practice which is not bad in itself unless

teachers do ;this without using the pirated items to teach toward a set of objectives. It is hard to take a bit from here and a bit from there and build a spiral curriculum which trains students to use high level cognitive skills or to develop skills in the affective domain.

6.7 Extent of translation, transformation, and adaptation during diffusion. I see an enormous amount of it. My most gratifying experiences are the times teachers take off from the materials and improve upon them. This seems to happen frequently in the NSF HPW type experience.

6.8 Effect of trends (fads?) in education on diffusion. I don't know, but I am fearful that there is a tendency to see change in terms of black and white, to think the grass is always greener on the other side, that there is a new panacea. This kind of thinking can lead people to reject what has already been developed painstakingly.

6.12 Extent to which developers create markets. Quite a bit in the 1960's reforms. I'm not sure much of these projects were initiated by the schools. They were responses to the needs of the schools, but were creations of nonschool people.

6.13 Effect of research on products. Some projects represent a form of action research--e.g., Taba materials, but to a lesser extent all the big 1960's projects were so developed. I think most of them took into account known research in education as well.

6.0 "General Observations: Do you have some general observations about the whole process of diffusion that would be useful to others who are developers or users and who participate in either dissemination or implementation activities or both?"

As noted earlier, I believe that developers of curriculum materials should begin their diffusion activities very early in their cycles of development work. Having representatives of the target population collaborate in development, rather than simply serve as guinea pigs for it's trial, seems to us the soundest way to lay a base for eventual larger scale dissemination efforts.

I won't attempt to make a list of the many sources of resource information to which a consultant can refer a school district. There are several recent publications such as the CEDaR reports, Title III publications, Havelock's works, and the recent volumes by Schmuck and Miles with good lists of resources. For entry, it is frequently most helpful for the potential user to talk to someone in a role similar to his own who has experience with the innovation in question.

It seems to me there are major problems to be overcome in users effectively communicating their needs to developers. When the developers rely on surveys used in need sensing the information they collect is likely to be superficial leaving far too much room for interpretation by the developer who may tend to introduce his biases at this point. I believe that more meaningful understanding of user feedback comes when the developer forms collaborative working relationships for temporary tasks with representatives of target populations. Another kind of problem frequently occurs in our experience when users initiate ideas of what developers should be doing and how they should be doing it without an under-

standing of the true nature of the developer's resource and the constraints placed upon the developer when funding for his work comes from a third party. This is also improved by temporary collaborative working relationships where the potential users begin to understand the nature of the developer's processes. They then begin to be able to make inputs to developers that have usability and feasibility.

I believe that it is extremely important that teachers be involved in the development of new products and ideas. Much of our work as developers involves identifying and validating the insights and innovations of teachers and administrators in local schools. It is an error to suppose that the only meaningful source for work on an innovation is the theoretician or researcher who may have explicated an idea. In our work, development involves a mix of inputs from such sources along with those from the user population. The more that teachers and local school administrators are supported to include some kind of development work or adaptation of innovations as a legitimate part of their role the more likely they are to be sophisticated in seeking out and trying out innovations developed elsewhere.

While we feel that it is important for teachers to do certain kinds of developmental things in their role, we believe it is very unrealistic to assume they can work at a high level of sophistication in developmental work. Their role is primarily to teach rather than to be developers. Over the past several years we found that the capabilities of doing good development work are very costly and seem rather rare in the field as yet. The high level of skill in

evaluation as well as special skills and insights having to do with designing of innovations and designing of training for their use are not typically in the experience of teachers. It seems to us that there is an important place for organizations that specialize in development work who can collaborate then with other resource systems and the potential users in the development and dissemination of innovations. Few school districts can mount this kind of resource internally when the community expects them to be spending the majority of their effort in teaching.

It appears that poor adoption and poor use of innovations is very common in the field. For example, Dick Miller reported at the AERA convention several years ago on the study of innovativeness in schools in Indiana. In his report he indicated that the quality of implementation of innovations seemed extremely low. Unless or until local school district personnel have the process skills of problem solving and adapting innovations to their local setting, we believe this will continue to be the case. Several of our products are aimed at providing training in procedures of problem solving and team work which we believe can aid in this problem. Some of our other products are for dealing with organizational procedures and norms which we believe are an additional need in dealing with this problem. Given such procedures, we believe that there should be translation, transformation, and adaptation of innovations by local school personnel so that the innovation meets local needs and constraints in a realistic manner.

Trends in education seem to have an important effect on diffusion of educational products. Part of this effect appears helpful and

part of it appears very problematic. Helpful effects can be pressures which build up for a school district to be open to trying new ideas. Problematic effects occur when they try the new things without the capability of adapting it to their local needs, dealing with potential negative side effects, building supportive norms for maintenance, and assessment of good and bad effects of the innovation. Without these things, the innovation eventually is seen as a failure and what might have been helpful aspects of the innovation are lost as the "baby is thrown out with the bath." As the trend for a particular innovation passes, a school district abandons it and moves on to the next trend. We then get change for change sake without any quality of improvement. We believe that most innovations cannot be made "teacher proof" but rather that capabilities in the kind of procedures that have been mentioned are needed. This might be thought of as a form of consumer education and training.

It appears that users of curriculum materials look most strongly to their peers and superiors when they feel the need for new products in the classroom. Recognition and utilization of this peer network of communication and influence and the building in of linkages to outside resources which relate to such networks seems to us to be the most viable strategy. We have created a network of "regional representatives" to do startup workshops of our training products around the country so that there is an interpersonal process being built up over time rather than simply relying on promotional literature. I attach copies of pages of our basic program plan describing this strategy. Wealthier and more innovative

school districts tend to go to expert resources in helping to solve their innovation needs. The vast majority of school districts, however, seem to tend more to rely on their informal peer networks.

I suspect that many developers, particulary with impetus from the publishers orientation, try to create markets for their products without involving users in a way that is responsive to their demands. I believe this is dealt with best by building up networks of interpersonal linkages such as I have referred to. The Madison Avenue approach may sell an awful lot of materials, but seems to me to perpetuate poor implementation.

As I noted earlier, research results concerning an innovation seem to us to have comparatively small effect on the diffusion of innovations. Until school personnel have more sophistication in data based problem solving procedures such as some of the ones represented by our products I believe this will continue to be true. Research results do have an effect on entry with larger school districts that have a few personnel with such sophistication. The teacher tends to be less influenced by what generalized research findings say than the question of how and in what way the innovation may fit into what is thought of as the unique local situation. The teacher isn't apt to care too much about what is true in Timbuktu. The teacher does care a great deal about what is true in terms of her own classroom. Procedures for finding this out and adapting an innovation to the local reality may help a teacher or school district be much more open to attempting innovations. When local educators have skills for comparatively simple levels of action research they also become more open and interested in

the implications of generalizable research concerning an innovation.

I suspect that major factors influencing diffusion of innovations in education in the past relate to phenomena of poor implementation of innovations. I worry when I see people creating strategies for diffusion based on the current reality rather than attempting to build new conditions which can support quality implementation as the result of diffusion. I think I have already given indications of my main ideas about this.

6.0 General Observations - Do you have some general observations about the whole process of diffusion (dissemination and implementation) that would be useful to others who are developers or users and who participate in either dissemination or implementation activities, or both?

6.1 At what point should a developer of curriculum materials begin his diffusion activities?

Implementation should begin right away as an important part of the development process. Dissemination (other than that required to get the cooperation of teachers in development) should wait until some evidence of effectiveness has been obtained.

6.2 If you were called in as a consultant to a school district, where would you tell them to turn for resource information?

In particular, to the curriculum projects (with government and private foundations as sources of names of such projects). The publishers will turn to the district.

6.3 How could users more effectively let developers know of their needs?

Students should ask their principals and districts for a role and a voice. School districts should ask their stat- departments to arrange systematic contacts with curriculum developers.

6.4 How can teachers (the users), be involved in the development of new products and ideas? Is it important? Is it possible?

It is very important that they be involved. See 2.0, 3.4, 4.4, and the second paragraph of 5.2. The teacher-centered development and adoption in the U.K. seems to establish this point.

6.5 Is maladoption of innovations common?

I don't know about maladoption, but certainly adoption choices and implementation procedures tend to fall far short of optimal for the time and place. This is in part due to inadequate evaluation of programs and, in part, to poor information flow.

6.6 Is poor use of innovations common?

Certainly. Without adequate changes in attitude, teachers simply cast new materials in the old mold. This can be worse than staying with traditional materials.

6.7 To what extent is there translation, transformation, and adaptation of innovation during the diffusion process?

Usually, very little that is not merely deleterious. However, the continued development and adaptation should be an integral part of diffusion.

6.12 To what extent do developers create markets for their products as opposed to responding to a demand initiated by the consumer?

I would expect that developers can only create markets for really new products by proving them to be more educationally effective or cheaper. A comparatively expensive form of education would need a convincing, long-term test to sell itself. On the other hand, a demand initiated by the consumer (teach our kids to read) often results in expensive use of equipment and personnel around an untested, or even unformulated, program.

6.13 To what extent does research influence the development of products?

My feeling is that the public is very influenced by the publicized output of research, without knowing its validity. On the other hand, curriculum developers do research and watch its details, but do they base their actions upon the results of research?

6.14 From your past experience, what do you consider the major factors influencing diffusion (dissemination/ implementation) of innovation in education?

In the long run--quality. In the short run--I wish I knew!

6.1 When a project to develop new materials is first planned, a number of pilot schools should be selected and the teachers in those schools should be prepared for the trial use of the new materials. As the project continues, more schools are brought in to try the materials and to begin the diffusion process, using the earlier schools as models.

6.4 The teachers in the pilot schools discussed above should play an important rôle in the trial and revision of the materials. This is what was done very effectively in the Nuffield project in England, where some of the teachers in the pilot schools also helped in the writing of the materials.

6.6 Unfortunately, the "New Math" is a prime example of how poor use can be made of innovation. Many teachers did not understand the philosophy or the content of the new materials and ended up teaching either wrong or useless material. Morris Kline's recent book "Why Johnny Can't Add" sums this up very clearly.

6.7 Transformation and adaptation of new curricular ideas have taken place by textbook writers who take up ideas from curriculum developers (such as SMSG or UISCM in mathematics) and incorporate them into compromise books which pay lip service to these new ideas but which do not develop the subject in an intellectually honest fashion. Another interesting case study took place in Africa where an AID supported project prepared mathematics texts for English speaking countries in East and West Africa. These were adopted by many different countries but then each began to work on their own adaptation in which they could take national pride and which they felt would suit their individual needs better.

6.8 Trends in education do sweep the nation periodically and influence schools to make changes, for better or for worse. Some of the latest have been individualization, accountability, etc.

6.0 GENERAL OBSERVATIONS: DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT THE WHOLE PROCESS OF DIFFUSION (DISSEMINATION & IMPLEMENTATION) THAT WOULD BE USEFUL TO OTHERS WHO ARE DEVELOPERS OR USERS AND WHO PARTICIPATE IN EITHER DISSEMINATION OR IMPLEMENTATION ACTIVITIES, OR BOTH?

6.1 At what point should a developer of curriculum materials begin his diffusion activities?

The developer should begin his diffusion activities immediately upon being funded. He has a responsibility to inform the educational community about his activities, about the rationale behind his work, about the kinds of assumptions that underlie the project, etc. As he moves through prototype development, field testing, and summative evaluation, he faces a variety of diffusion tasks. Obviously, when the product is ready for installation, diffusion becomes the principal activity. Nevertheless, development is not a linear process with diffusion occurring only at the end of the development cycle. Diffusion occurs at each stage of the development process. The diffusion form, the content, and the people to be contacted may vary from one period to the next, but the diffusion process is continuous throughout the life of the project and thereafter.

6.2 If you were called in as a consultant to the school district, where would you tell them to turn for resource information?

In the field of social studies, the Social Science Education Consortium, the National Council for the Social Studies, and ERIC/ChESS are obviously key sources of information. I would also draw their attention to important university-based centers that have information dissemination channels. Indiana University, the Lincoln-Filene Center, Carnegie-Mellon, and a handful of others are locations that have procedures for responding to teacher inquiries.

Depending upon the characteristics of the information the school requires, other sources would be relevant. For instance, if a school is interested in revising its civic education program, one could draw on a number of professional associations such as the American Bar Association and the American Political Science Association for information as well as a number of special projects that are creating instructional materials relating to the subject field. In most cases, state departments of public instruction are helpful.

6.3 How could users more effectively let developers know of their needs?

I don't know of a simple mechanism to facilitate this effort. Most of the responsibility for learning user needs falls upon the developer, in my opinion.

6.4 How can teachers (the users) be involved in the development of new products and ideas? Is it important? Is it possible?

It is possible and it is important for users to be involved in the development of new products and ideas. Nevertheless, one must avoid romanticism in approaching this topic. It is impractical to respond to all user needs. Nor is it possible to select a small number of teachers as representatives of users, because no teacher or small group of teachers adequately represents the wide range of teacher opinion. Developers typically use teachers as pilot teachers and use information supplied by the pilot teachers to improve the product. We try to identify teachers who are at work on courses that parallel the efforts underway within our projects. When we find these teachers, we attempt within the limits of available funds,

to bring them into the development process in some way. In the best of circumstances, a teacher may become a writer-developer.

6.5 Is maladoption of innovations common?

The answer is yes, if maladoption means adoption in ways other than the developer had planned. It is rare for the innovation to be used exactly as it was tested. Once a teacher buys the materials, he feels free to use the materials in whatever way he chooses. I see no way to avoid this, nor indeed do I think it is desirable to try.

6.6 Is poor use of innovations common?

Yes. All developers can report of instances in which teachers have not understood the innovation and are dissatisfied because the innovation does not produce results for which it was never intended. In addition, teachers sometimes adapt an innovation intended for one instructional style to a style more familiar to the teacher and thereby reduce the effectiveness of the innovation.

6.7 To what extent is there translation, transformation, and adaptation on innovation during the diffusion process?

I think I answered this in part in 6.5 above. It is clear that teachers make many changes in the products as they use them. A course designed for the ninth-grade will be adopted and used at the twelfth-grade, if it suits the teacher's purposes. There is no way the developer can control this. In some schools, I have observed the same course offered at both the ninth-grade and the twelfth-grade. Both the ninth-grade teachers and the twelfth-grade teachers wanted to use it.

Case studies are an attractive feature of American Political Behavior to teachers. While the case studies were intended primarily as application

exercises for concepts and skills taught in the program, there is a tendency for some teachers to use the case studies alone, because they interest students. I think the case studies have lost much of their power when used in this way. Nevertheless, they satisfy the teachers' purposes and that is what counts.

6.8 What effect do trends in education have upon the diffusion of educational products?

Trends or fashions in education have an effect upon both diffusion and adoption. Organizers of professional meetings and editors of professional journals are both trend-setters and trend-observors. A developer whose ideas are not currently fasionable may find it difficult to be represented at professional meetings and in professional journals. What is usually required is that the developer must tailor his message to the demands of the diffusion channel. Therefore, if "values education" is the fashion for this year, the developer will try to pull from his product those ideas that relate to values education and both speak and write about values education in order to convey ideas relating to his program. It is a mistake, however, for the developer to be guided totally by current fashions, as these change very rapidly. A developer who sought today to write materials in keeping with the current fashion would learn to his chagrin that the fashions had changed by the time his materials were ready for consumption. Therefore, the developer's task, insofar as possible, is to predict what will be long-term interests of users, and not be swept up in momentary fashions.

6.9 Whom do users of curriculum materials look to for consultative help when they feel they need new products for the classroom?

Obviously, this varies enormously. In some schools a particular teacher is recognized as an informed opinion leader. A department chairman or a curriculum supervisor may have this status for some teachers. In some situations an individual at a local college or university is well known for his up-to-date information and for his capacity to help schools. As I indicated earlier, textbook salesmen frequently perform this role. In my opinion, this role is not adequately satisfied at the present time. It was this lack that led us to attempt the creation of a field agent network to satisfy these purposes for teachers in the Midwest.

6. (10) How do users make decisions about their needs with respect to new educational products?

This is rarely done systematically. Few curriculum decisions are made following a careful appraisal of all educational products available for that subject, according to a clearly specified set of criteria. Nor do schools usually begin by specifying the goals they are attempting to achieve. Rather, it is more common for a particular individual or a group of individuals who wish to make a change to advocate a particular product because they are attracted to it. They then set out to convince their colleagues of the need to adopt the innovation. They become advocates of one program against what is presently offered, rather than the proponents of a set of criteria or goals which are put forward for consideration prior to a careful appraisal of all products that might most adequately satisfy the criteria. Frequently, the decision is based upon what is fashionable or on the basis of the reputation of the developer, rather than upon a careful

match of what the product provides and what the school needs.

6. (11) How do users find resources to help solve their needs?

I am puzzled by the question. If resources means information and consultative help, I believe this has been answered earlier. If it means financial resources, I suppose that the user draws upon whatever someone has told him is available for expenditures.

6. (12) To what extent do developers create markets for their products as opposed to responding to a demand initiated by the consumer?

In my opinion, developers are primarily in the process of creating markets and creating need, rather than responding to need. As I indicated earlier, "needs" tend to be articulated as very general statements, such as "the need to improve the teaching of American history" or "the need to teach students more about how decisions are actually made in our society." Many ways are open for responding to needs stated so broadly. Typically the developer listens to the generalized need and creates a specific response, justifying his response as best he can.

6. (13) To what extent does research influence the development of products?

Research is important in at least two ways. First of all, developers draw upon research in fashioning their products. They use research within the subject field as a way of making certain they are drawing upon the leading ideas within their field. They attend to research on learning also.

They try to design their instructional products in such a way that they take full advantage of the best that is known about how students learn. They use research for the design of materials, pacing of the instructional program, formatting the program, etc. Finally, development itself is one kind of research activity, in the sense that the developer tests his program empirically to learn whether it works and modifies his program on the basis of the results.

6.(14) From your past experience, what do you consider the major factors influencing diffusion (dissemination/implementation) of innovation in eduation?

It is difficult to answer this question without summarizing all of the things that have been said earlier. Therefore, I shall use this answer to merely emphasize one point. Among all the roles that are important to innovation in education, the diffusion role is the most weakly developed. We know far too little about what is required to be professionally adept at diffusion. We are only beginning to prepare people to play the diffusion role. Currently, professional rewards are not directed toward encouraged competent diffusion agents. In my opinion, it will be difficult to speed up the process of innovation in American schools until more attention is paid to the development of the diffusion role.

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6.0 GENERAL OBSERVATIONS: DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT THE WHOLE PROCESS OF DIFFUSION (DISSEMINATION & IMPLEMENTATION) THAT WOULD BE USEFUL TO OTHERS WHO ARE DEVELOPERS OR USERS AND WHO PARTICIPATE IN EITHER DISSEMINATION OR IMPLEMENTATION ACTIVITIES, OR BOTH?

6.1 At what point should a developer of curriculum materials begin his diffusion activities?

As early as possible. Dissemination activities begin with the first experimental test, and developers should begin to analyze and solve diffusion problems long before the final product begins to take shape. For the most part the developers have totally neglected "market realities". As a consequence millions of dollars of development funds have been wasted on impractical or excessively expensive products. Early sensitivity to the problems of diffusion would greatly alleviate this problem.

6.2 If you were called in as a consultant to a school district, where would you tell them to turn for resource information?

The Social Science Education Consortium.

6.3 How could users more effectively let developers know of their needs?

By participating in the process of development and, in particular, making their best teachers available on loan to development groups.

6.4 How can teachers (the users) be involved in the development of new products and ideas? Is it important? Is it possible?

It is not only possible, it is extremely desirable. The problem for the developer is finding good teachers who can be released for work in the development process. If users expressed more interest in this experience, developers would be most grateful. The lack of good teachers in the development process is a critical weakness of much development work.

6.5 Is maladoption of innovations common?

I suspect so.

6.6 Is poor use of innovations common?

I suspect so.

6.7 To what extent is there translation, transformation, and adaptation of innovation during the diffusion process?

Hopefully, a good deal. In my view, adaptation of innovation to local needs is critical and should be encouraged in the diffusion process. This process should probably be started initially with the participation of the developer, but modification of programs to fit local needs is an essential component of effective innovation.

6.8 What effect do trends in education have upon the diffusion of educational products?

I suspect they have a very strong effect.

6.9 Whom do users of curriculum materials look to for consultative help when they feel they need new products for the classroom?

I don't know, but the developers are certainly willing to talk.

6.(10) How do users make decisions about their needs with respect to new educational products?

I know very little about this.

6.(11) How do users find resources to help solve their needs?

This is also outside my experience.

6.(12) To what extent do developers create markets for their products as opposed to responding to a demand initiated by the consumer?

To a large extent. For the most part educational R&D has operated in an environment fairly well removed from the consumer in the last ten years or so. The greatest impetus for the development of new products comes from the academic community rather than from the consumer. The consequence of this is that developers are continuously faced with the problem of creating a market for their products. That, in my view, is what development is all about: creation of products and education of the consumer.

6.(13) To what extent does research influence the development of products?

Research on human growth and development is having an increasing influence on the developer of products. Developers are increasingly asking not only what is the "structure of the discipline", but also what is the nature of the child who is going to be receiving this material and how can we adapt the material to the age specific needs of that student. While knowledge in the field of psychology is hardly adequate to deal with this problem on any complex level, school systems and developers are increasingly turning to new knowledge about children and about human growth and development to aid them in the definition of curriculum programs and products.

6.(14) From you past experience, what do you consider the major factors influencing diffusion (dissemination/implementation) of innovation in education?

Money and politics.

6.(15) Others?

None.

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6.0 GENERAL OBSERVATIONS: DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT THE WHOLE PROCESS OF DIFFUSION (DISSEMINATION & IMPLEMENTATION) THAT WOULD BE USEFUL TO OTHERS WHO ARE DEVELOPERS OR USERS AND WHO PARTICIPATE IN EITHER DISSEMINATION OR IMPLEMENTATION ACTIVITIES, OR BOTH?

6.1 The curriculum developer has to begin the work of diffusion concurrently with the work of development, from conception to publication. A realistic notion of curriculum dissemination is essential to the developer if products are to be developed that have any reasonable chance of implementation.

6.2 One current periodical source of data is the March, 1973, issue of Social Education, containing a basic set of guidelines and references for the educator concerned with dissemination or implementation. Consultant aid is avialable from a limited number of sources like the Social Studies Development Center's Diffusion Project at Indiana University.

6.3 One exemplary means of conveying needs to producers was accomplished with the publication of the NCSS Curriculum Guidelines that spelled out a broad range of curriculum needs and criteria for assessment. While the outcome of the Guidelines is not yet known it seems reasonable to assume that this sort of vigorous effort will bear fruit.

6.4 It is essential for teachers to have input to the development of new curriculum products--a realistic evaluation is not possible without careful classroom assessment--but the opportunity for a large number of teachers to become involved is limited due to the scale of the test and evaluation process characteristic of most development projects. It is possible for a few teachers to become involved in curriculum development but only a few.

6.5--6.6 It is my observation that innovations are often badly adopted and poorly used but I have no empirical data to support any conclusions.

6.(12) It seems clear that developers, through any level of diffusion effort, are working to create demand for their products. It is my judgment that the

prevailing marketing system for curriculum materials stimulates such a system and that the system both contributes to the satisfaction of expressed needs for curriculum products and to the very creation of those needs. It would seem that an equilibrium model might explain the operation of such a system where reform movements would stimulate expressed needs for innovation and periods of stabilization or reaction would stimulate a return to the "tried and true" or, at another extreme, the movement of the reform curricula to the status of the conventional wisdom.

6.(13) The extent to which research influences the development of educational products is not clear. Products developed by commercial publishers generally follow research findings by a considerable period. Most educational research is aimed at questions other than those concerned with product development and most product development projects have very weak research components. The development project with research facilities and input into product design is the exception rather than the rule. Project funding agencies have thus far been reluctant to fund significant research activities associated with product development. The low level of adoption of "new" curricula may bring a change to this situation.

6.(14) The major factors influencing diffusion of innovation in education are many and diffuse. Most research in educational diffusion has not been conducted within a paradigm of planned social change; that which has been done has been generally narrow in focus and shallow in duration. A great deal of work needs to be done to ascertain how ideological positions affect product development, evaluation, and implementation. The basic philosophies of developers and users must be accounted for if any of the variables that have been studied thus far are to have any import in predicting how innovation in education may be enhanced or retarded. It seems worth trying.

6.0 GENERAL OBSERVATIONS: -10-

6.1 AT WHAT POINT SHOULD A DEVELOPER OF CURRICULUM MATERIALS BEGIN HIS DIFFUSION ACTIVITIES?

The sooner the better. I have stated earlier that those materials which seem to have been most successfully diffused were those in which teachers and pilot schools were selected early for field testing and revision. This is one of the primary reasons why the federally-funded curriculum projects may have had more success than publisher developed projects. The publishers have, for the most part, neglected the diffusion process until very late in the game.

6.2 IF YOU WERE CALLED IN AS A CONSULTANT TO A SCHOOL DISTRICT, WHERE WOULD YOU TELL THEM TO TURN FOR RESOURCE INFORMATION?

I have served as a consultant to seven schools ranging from New York to Missouri, and Illinois. In all cases the first suggested resource compendium is the Social Studies Curriculum Materials Data Book, published by the SSEC. Additionally, the ASCD handbook on projects is a worthy source of information and the two issues of Social Education which provide reviews of social studies projects are also extremely helpful for school districts contemplating curriculum revision. I have not had experience in recommending lists of materials other than social studies.

6.3 HOW COULD USERS MORE EFFECTIVELY LET DEVELOPERS KNOW OF THEIR NEEDS?

This question was never asked in the early years of social studies curriculum revision. For the most part, teachers were not involved in the early needs assessment activities. At the present time, developers are soliciting information from teachers and other school personnel, but on a very infrequent basis. The curriculum network established by the SSEC in social studies might serve as

one means as to gathering information on the needs of classroom teachers. Another possible way would be to have questionnaires in the major professional journals in each subject matter discipline. If local and state-wide professional associations were to establish committees based on needs assessment in specific subject areas they might also serve as a useful vehicle for notifying developers of their needs.

6.4 *HOW CAN TEACHERS (THE USERS) BE INVOLVED IN THE DEVELOPMENT OF NEW PRODUCTS AND IDEAS? IS IT IMPORTANT? IS IT POSSIBLE?*

Some projects have involved teachers in the development of new products and ideas. It is extremely important and is one of the most effective ways to insure diffusion. However, most teachers do not have the time to devote many hours for curriculum writing. A good plan that seemed to be effective was the one utilized by the Amherst project several years ago. Under this plan the selected teachers were brought to Amherst College for a six-week summer program and were provided with all the necessary materials and resources in order to develop booklets for the Amherst series. This plan could be followed by both funded projects as well as private publishers. Then too, publishers have involved teachers in the development of new materials for many years. Many publishers have hired teachers for their professional writing staff. This issue - involving teachers in the development of materials - is an extremely significant factor in the diffusion process and one which should be emphasized in any national effort.

6.5 *IS MALADOPTION OF INNOVATIONS COMMON?*

Yes. Maladoption of innovation can occur in many ways. First of all, the school can adopt materials that are not designed for the student population and/or the community. Secondly, the

materials can be adopted with little or no regard to the expertise and knowledge of the instructional staff. Even a relatively simple curriculum project such as the Concepts and Values series from Harcourt should not be implemented without teacher training sessions.

6.6 IS POOR USE OF INNOVATIONS COMMON?

I am certain many curriculum developers would say their materials are "poorly used." However, there are probably few instances in which the poorly used innovation is not superior to the type of education that was occurring prior to its implementation. There are instances where innovations have been so ineffectively implemented that they soured the students, staff, and/or community on new curriculum materials for several years. This occurred in Naperville, Illinois, where the Field Social Studies Program aroused a furor among local conservative elements. As a result, the science department was unable to develop an individualized study program because the school administrative staff feared further repercussions. However, I still maintain that in most cases newly developed materials are superior to traditional methods of instruction even if they are not implemented in complete accordance with the developer's wishes.

6.7 TO WHAT EXTENT IS THERE TRANSLATION, TRANSFORMATION, AND ADAPTION OF INNOVATION DURING THE DIFFUSION PROCESS?

Probably every curriculum project that I am aware of has been transformed, adopted, and/or otherwise altered when it is implemented in the schools. This is especially true, I think, of those schools which have an innovative learning environment, including such things as differentiated staffing, flexible scheduling and individualized instruction. In many cases the new social studies materials were developed concurrently with a learning environment

revolution. This resulted in materials designed for schools of the early '60s that no longer exist. Schools with innovative learning environments frequently can not implement all phases of new curriculum materials (See March, 1973 issue of Social Studies.)

6.8 WHAT EFFECT DO TRENDS IN EDUCATION HAVE UPON THE DIFFUSION OF EDUCATIONAL PRODUCTS?

Trends in education are significant in determining the success of diffusion of educational products. Simulation games are obviously riding the crest of the wave at the present time. Good simulation games and bad simulation games are being used throughout the nation. Prior to simulation games the multi-text approach enjoyed a period of high popularity. I think the future will see the development of materials more designed to be implemented in an individualized, self-paced learning program. Those publishers and curriculum developers who are best able to read the trends will be those who will have the most success as far as diffusion of their product as far as financial success. Most teachers turn to their department chairman or social studies supervisor when they feel the need for additional curriculum material. In some states the State Consultant can play a valuable role in this area. In Illinois, however, a letter to the State Superintendent of Schools Office simply brings a reply suggesting that the teacher contact the SSEC or a similar organization for particular disciplines.

6.(10) HOW DO USERS MAKE DECISIONS ABOUT THEIR NEEDS WITH RESPECT TO NEW EDUCATIONAL PRODUCTS?

Sad to say, most teachers or curriculum selection committees make decisions based on very irrational bases. Physical attractiveness, price and supposed ease of implementation become prime criteria for curriculum selection. Seldom do committees or

individual teachers carry on needs assessment activities or make logical analyses of materials prior to selection.

6.(11) HOW DO USERS FIND RESOURCES TO HELP SOLVE THEIR NEEDS?

Most teachers and other users of new materials will go to the same sources mentioned in 6.9. If this question implies financial resources I am not certain that many teachers can go beyond the budgetary limits set by their school. In a few cases, teachers may serve as a pilot teacher or may attend an institute in which they receive free materials.

6.(12) TO WHAT EXTENT DO DEVELOPERS CREATE MARKETS FOR THEIR PRODUCTS AS OPPOSED TO RESPONDING TO A DEMAND INITIATED BY THE CONSUMER?

Curriculum developers must be adept at meeting the trends and climate for educational materials. It is highly unlikely in my opinion that the users actually initiate demands for particular products. If an idea assists in developing effective curriculum and leads to more enthusiastic students this idea will be copied by other curriculum developers. Once again, those curriculum developers best able to perceive the trends in education are those who become financially successful. Those who hop on the bandwagon late may find themselves out of step as educational products and strategies change.

6.(13) TO WHAT EXTENT DOES RESEARCH INFLUENCE THE DEVELOPMENT OF PRODUCTS?

In recent years research has played an important role in development of educational materials. National, regional, and university-oriented research programs have brought to light significant areas where American students do not measure up to the goals that are commonly assumed to be beneficial. Therefore, as the result of this research being published, curriculum developers and publishers

are able to take direction from these studies. I think this trend will continue as the National Assessment Program becomes more pervasive and publicized.

6.(14) FROM YOUR PAST EXPERIENCE, WHAT DO YOU CONSIDER THE MAJOR FACTORS INFLUENCING DIFFUSION (DISSEMINATION/ IMPLEMENTATION) OF INNOVATION IN EDUCATION?

The major factors influencing diffusion of any innovative curriculum materials or practice are a willing and concerned professional staff facilitated by knowledgeable and aware supervisors communicating the materials to appreciative students. In effect, if curriculum materials were not developed by funded projects or publishers, curriculum innovation and teaching strategy innovation would continue to occur. Teachers have created and will continue to create their own materials utilizing their own ideas as well as those of others. However, the significance of the federally funded projects and publishers and their efforts for curriculum revision have been extremely significant in the last two decades. In the past four years I have given more than two dozen talks on differentiated staffing. This innovation, although not one of curriculum materials, is one of the new "hot items" on the educational scene today. Based on these experiences I would say that a houthful staff in a rapidly growing area is more likely to be positive toward educational innovation than a settled area with a staff with a median age over 35 and/or a median length of service over eight years. In Rochester, New York, one school with which I have worked divided the staff so that those most receptive to change would move to a new school in a growing area of the district and those most reluctant to change were retained at the more established school. I think this same pattern could apply to both changes in school environment and innovations in curriculum.

6.0 GENERAL OBSERVATIONS: DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT THE WHOLE PROCESS OF DIFFUSION (DISSEMINATION & IMPLEMENTATION) THAT WOULD BE USEFUL TO OTHERS WHO ARE DEVELOPERS OR USERS AND WHO PARTICIPATE IN EITHER DISSEMINATION OR IMPLEMENTATION ACTIVITIES, OR BOTH?

6.1 At what point should a developer of curriculum materials begin his diffusion activities?

Diffusion activities should be built into the whole development process so as to provide continuing feedback from the potential users regarding the possibilities and problems inherent in the product under development.

6.2 If you were called in as a consultant to a school district, where would you tell them to turn for resource information?

Other school systems in the area who had experience with innovations in their area of interest, including especially places where they could observe the program in action. Professional references such as ERIC; development teams and trained consultants in the program of interest.

6.3 How could users more effectively let developers know of their needs?

By writing more in their professional magazines of the real needs of the classroom. By setting up local teachers centers, etc., whose purpose would be problem identification and specification rather than only reinventing the wheel locally. This is difficult because users rarely analyze their needs in a sufficiently detached way to indicate the needed regional innovations.

6.4 How can teachers (the users) be involved in the development of new products and ideas? Is it important? Is it possible?

Through teachers centers, summer institutes, and for a selected few as staff members of the development team. Such participation of teachers is absolutely essential, I feel, if one is developing programs for the schools. A carefully designed formative evaluation plan including field tests of the product during development can also involve teachers in a meaningful way.

6.5 Is maladoption of innovations common?

Serious maladoption occurs in a limited (5 to 15%) number of cases. The definition of maladoption is an important question. For example, the innovation may not be in use in the way the developers intended and, therefore, we can call it a maladoption. I prefer to ask about the quality of experience for the pupil after and before the adoption of the product. If there has been significant improvement, it is not a maladoption.

6.6 Is poor use of innovations common?

In relation to the answer to 6.5, it depends on who defines "poor."

6.7 To what extent is there translation, transformation, and adaptation of innovation during the diffusion process?

Extensive, one would hope, since only through such procedures can the innovation become truly internalized into the diversity that is American education. How one helps to insure that such changes are useful and not contradictory to the whole purpose of the innovation is a major problem of the diffusion process. I feel the best approach

is to emphasize training of local and regional leaders who truly understand the scope and intent of the program and have the skills necessary to work with the local school systems.

6.8 What effect do trends in education have upon the diffusion of educational products?

Very significant, and not enough concern has been given to this question. For example, most NSF science curriculum projects were designed for whole classroom use. Will trends toward individualization, etc., cause people to throw these aside as old fashioned, even though the content is what they want?

6.9 Whom do users of curriculum materials look to for consultative help when they feel they need new products for the classroom?

A wide variety of individuals including most of those mentioned in question 5.

6.10 How do users make decisions about their needs with respect to new educational products?

I really don't know.

6.11 How do users find resources to help solve their needs?

Outside funds, and, of course, reallocation of priorities regarding use of internal funds.

6.12 To what extent do developers create markets for their products as opposed to responding to a demand initiated by the consumer?

It depends on the area and the state of the art at that time. If developers want a significant change (textbook to laboratory-centered science in the elementary school), they have to create the market.

6.13 To what extent does research influence the development of products?

With a few notable exceptions, only minimally if you think of research in the traditional sense of educational research. On the other hand, I consider the whole development process to be a most important form of educational research.

6.14 From your past experience, what do you consider the major factors influencing diffusion (dissemination/implementation) of innovation in education?

The major factors influencing diffusion of innovation in education are the nature and quality of the product, the timing of its appearance, and the planning that is done to bring about diffusion. If it is left to chance, there is little possibility for meaningful diffusion. The major reason why the diffusion of innovation, especially at the elementary school level, needs significant planning and support is the fact that the usual delivery systems (publishers and equipment suppliers) for educational products at this level have a history of being non-innovative. Evidence for this is easily obtained by reviewing the bulk of publisher- produced textbooks in any given field. The degree of similarity is overwhelming, not only in content, but in style of presentation. All efforts seem to be related to the mass market and what it bought yesterday, with little emphasis on how to evolve what might be needed tomorrow. Extensive support from outside local school districts will continue to be needed if meaningful diffusion of innovation is to take place. The setting up of a regional

and/or a national network of teachers' centers devoted to the diffusion of new ideas should be a major priority in education.

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6.0 General Observations: Do you have some general observations about the whole process of diffusion (dissemination and implementation) that would be useful to others who are developers or users and who participate in either dissemination or implementation activities, or both?

6.1 At what point should a developer of curriculum materials begin his diffusion activities?

One general observation I would make relative to the diffusion of new ideas and curricula would be that effective or successful dissemination and implementation seems to be a function of certain skills embodied in the consultant or change agent. These skills, simply stated, are skills of human relations, problem solving and organizational development. Attention to these skills seems to have pay-off whether the diffusion is initiated by the developer or asked for by the user.

Schmuck and Miles (1971), have identified four strategies for school improvement which seem to cover most efforts in educational development. The first strategy is legislative, which usually is initiated at the state or federal level. Examples of this strategy are state curriculum codes for the teaching of special courses (history, civics, etc.) and the ESEA Title I program for "disadvantaged" learners. A second approach has been curriculum development, which has focused on materials and instructional procedures for the immediate classroom. This approach is emphasized in the "new" science and "new" social studies programs. A third strategy has focused on role-shaping with the assumption that persons with certain roles can function more effectively through a perfecting of those roles or by changing behavior and thereby leading to new roles. Examples here are role-playing workshops, micro-teaching labs, and role simulation games. A fourth strategy takes a holistic approach in combining elements of the first three in a design for the whole system.

Since any curriculum must deal with a social dimension, an intellectual dimension, and a personal dimension, total concentration on any one of these areas only frustrate efforts for instructional improvement. For example, it is not enough for a social science consultant who is aware of materials in minority group education and who personally feels committed to minority group education to effectively consult in a high school social science department if its members and, indeed, the whole faculty is saying, "We don't have a problem here for we do not have any minority groups."

Further, an education consultant or developer who is asked by a school administrator to come into his school and aid in the development or implementation of a new social science program and finds out that members of the social science department have not been consulted by the administrator, may have need for organizational problem-solving and inter-personal communication skills if he is to be an effective facilitator of change.

If a school system (social system) is interested in developing an articulated K-12 social science program and calls upon a social science consultant to help facilitate such a program, it is imperative that the consultant be aware not only of the latest understandings in social science and education, but also possess an understanding of how organizations (and individuals within them) function. In other words, attention must be given to the fourth strategy if we are to be successful in carrying out innovation. This necessitates the utilization of organizational development strategies both in theory and practice.

The question arises as to the present nature of training in the delineated areas of competency deficiency. Jensen (1969) wrote that the typical university or college program in teacher education provides little or no means for developing understandings about the socio-psychological aspects of the organizational environment in which the instructional transactions between teachers and their clients take place. Consequently, most beginning teachers are inducted into the educational profession seemingly

competent to lead instructional projects, but with little ability to perceive and cope with the organizational conditions which dictate the possibilities and limits for achieving instructional objectives. This lack of ability to perceive and manage organizational conditions tends to produce interpersonal conflict and a degree of instructional inefficiency that tends to erupte in the new teachers a frustration and disillusionment that often turns to pessimism, and sometimes to cynicism, as the new teachers become "oldtimers." In short, lack of ability to skillfully perceive and manage organizational conditions produces a subtle form of socialization of teachers, students and administrative personnel that can adversely affect the instructional processes.

We have little reason to believe and no evidence to show that there have been universal changes in our teacher education institutions in the past three years. A conjecture, then, that the adults presently employed in our schools (teachers and administrators) will by and large have a low level of competency and little or no experience in interpersonal communication and organizational problem-solving.

Putting aside the problems of teacher certification by teacher education institutions lacking qualified personnel to instruct and provide appropriate experiences to meet the state requirements, let us turn our attention to the certified teacher in any number of school districts. We first need to state several assumptions.

First, meaningful and on-going change in an organization, as exemplified by the school building, will result if all the sub-systems of the organization are involved in the process of re-education rather than a random few. In the school building this means the faculty members of <u>all</u> departments, not just the social science teachers. Thus, for example, in attempting to implement a new social science curriculum in a school where time and limited resources must be shared, <u>all</u> faculty members (or their appropriate representatives) need to be involved at the appropriate levels of decision-making regarding implementation.

Second, an organization should be aware of the relationship between processes and products. The chances for successfully implementing a curriculum innovation in school "A" where the department head tells the other members of the department they should utilize certain materials in the coming year will differ with school "B" where the department members have engaged in dialog about the consequences of utilizing the same curricular materials.

The potential of a curriculum innovation sustaining itself in time is quite remote in school "A" where an outside consultant under the guise of being asked to evaluate a proposed change, is really being asked to decide in favor of two warring factors in the social science department. In school "B," on the other hand, where a specialist is asked to help the department develop a statement of philosophy based on the strengths of the several points of view in the department, the prospects of a curriculum innovation sustaining itself are great.

Third, organizational development should result in the opening of each sub-system to the receptiveness of feedback from each of the other sub-systems. If the social science department of high school "A" has proposed to the administration a community involvement curriculum for all students in the school without engaging the appropriate members from other departments in dialog about the consequences of this program on their respective programs it has greatly reduced its chances for successful implementation. The school that has dialoged with the appropriate representatives of the varying racial and socio-economic groups in the community prior to writing a proposal for a community involvement curriculum has greatly increased the potential for community receptivity. This is especially true when the appropriate community representatives have been invited to help evaluate the community involvement program.

Fourth, organizational development should lead to a realization of resources available to the whole system. This should bring about an awareness

of the need to consider all sub-systems in any decision-making relative to the utilization of resources consistent with the mission of the system as a whole. School "A," whose faculty members individually bombard the city water treatment facilities with phone calls about visitations will soon wear out its welcome. In school "B" the faculty has approached the use of the community problem holistically. This faculty has set up a communication information system which allows each teacher to know what are the preferred visitation times and the visitation policies of the water treatment center. These teachers have worked out a community use program with the appropriate community representatives so that visits are not made by many teachers in ignorance of each other, thus avoiding duplication and repetition. In this school, educators were able to work out an interdisciplinary curricular unit involving the sixth grade mathematics, science, and social science teachers utilizing the water treatment center and other community resources.

Training for organizational development seeks to increase the problem-solving and communication competencies of members of organizations so they are better able to carry on the task of the organization using available resources. This should result if there:

1. are clear communication networks between sub-systems.
2. are clear awareness and understandings of system members relative to the differing needs and goals of those in other systems (schools) making up the unified district.
3. is awareness of how members of different sub-systems of a single system and different systems affect each other.
4. is more involvement of personnel in decision-making processes.

These assumptions concerning the theory of organizational development have been substantiated by the literature on the implementation of organizational innovations in education. Gross, Giacquinta, and Bernstein (1971), found a number of barriers leading to the failure of educational innovations to be implemented. Among these were:

1. the teachers' lack of clarity about the new role model.
2. the teachers' lack of skills and knowledge required to carry out the task of innovation.
3. the unavailability of required materials and equipment.
4. the organizational arrangements existing prior to and during the innovation's introduction that were incompatible with the innovation.

Training in organizational development would provide the experiences in learning to allow school building staffs the opportunity to develop and use the needed skills necessary to avoid the barriers identified by Gross and his colleagues.

Training for organizational development differs from consultation as presently carried on by most educational consultants, as they must also be able to diagnose communication and organizational problems and assess the needs of sub-systems based on feedback from the system as a whole as suggested in the hypothesized examples above.

The emphasis in training should be away from the isolated individual who, for example, attends summer workshops and institutes, and toward the whole sub-system of specialists and faculty; trained to work on the realistic problems of their own organizational responsibilities.

Supporting the holistic training strategy, Richard E. Gross, speaking at the 1971 National Council of Social Studies Convention in Denver, found the results of summer institutes to be disheartening in that, "Thousands of individual teachers of history and the social studies have experienced these programs, but the majority admit to little impact upon their fellow teachers and many have not even maintained new directions in their efforts. This old approach is now being questioned and this accounts for the tendency to shape school and district teams, including administrators, who focus during the period (of workshops) upon human relations and change-agent skills, as well as upon new developments and approaches in the subject matter field."

It is for inservice and laboratory training to introduce and develop these skills and competencies and to this end additional resources need to be allocated.

Case Study--An Argument for Organizational Skill Development

A state social studies specialist was asked in June 1971, by the ninth grade social studies team at Franklin Junior High School to consult with them about their new ninth grade program they planned to implement that September. Franklin School was a one-year-old facility staffed by 36 teachers and administrators for about 800 students. The social studies team was composed of four instructors and one coordinator.

The problem addressed to the specialist was that of examining their eight units that were to be the foundation of a "community involvement" program and offer suggestions. The problem as stated turned out to be not the real problem. The team had been notified in May that a federal proposal to help fund the program had been turned down because "there was enough money in the community" for such a program to which the team agreed.

Team members were interested in getting their students out into the community to actually study real problems around them. They now felt that without the federal money the program was not possible as, for example, there would be no money for buses to take students into the community and bring them back again.

After a day of discussion the social studies specialist was aware of several problems and personal concerns. The team had poorly planned their program, they had no awareness of or skills in organizational problem-solving and as such had not gathered sufficient data that would have allowed them to more accurately diagnose their program and draw up appropriate action plans. They had seemed almost to assume that if they had received the federal money any problems that arose could be paid for.

In looking back the consultant now realizes he did not have the skills necessary to systematically help them in problem-solving. At that time he was aware that time was short and wished he had been consulted prior to the Franklin team's applying for the federal money.

In terms of specific action steps he recommended that the team try to list the kinds of community experiences they would like to have their students have and then to list the kind of skills the students would need to realize these experiences such as interviewing, for example. It was suggested they also try to anticipate problems their program was going to encounter.

Based on these answers it was suggested that they try to assess the availability of resources at their disposal both actual and potential. They were asked, for example, to look at the community as a resource and to assess areas where commitments might be found to help overcome their financial difficulties. Perhaps someone could be found who would be interested in driving students to and from clinical sites.

The June meeting also made clear to the specialist that there was a communication gap in the team. On the surface members seemed to work well together; there seemed to be respect for age and experience differences. Yet there was deference by two members of the team to the two other members at points where there should have been continued dialog. It was apparent that two members were going along with the other two so as to avoid conflicts such as had arisen the previous year and were still unresolved. The eight-unit program was a compromise that two of the members really did not believe in.

The specialist was aware of this problem but as he left the June meeting he realized he did not know how to help close the communication gap. In fact, he was not even sure his recommendations would be followed and that the "new" ninth grade program would probably differ little from the conventional program the team had utilized the year before.

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6.0 Do you have some general observations about the whole process of diffusion that would be useful to others who are developers or users and who participate in either dissemination or implementation activities, or both?

The developer should begin dissemination activities as soon as he has an operational model even if it is in rough form and needs refinement. Communication between developer and users at an early stage in development of the innovative product may produce a more useful product in less time and with smaller financial expenditure than if the developer waited until he felt he had a product in final form.

Users can be directed to publications such as those from NSF, USOE, ERIC/CRIER and from professional groups such as NCTM which describe innovative projects and products. Users can also turn to nearby universities and/or to ones that are known as leaders in the field for which innovations are sought. A consultant might suggest that users seek out leaders (such as curriculum directors) in nearby school systems that have successfully adopted innovative products. If there is an active State Department (such as in West Virginia) users should be directed to appropriate personnel there. In states with active special agencies, such as the Cooperative Educational Services Agencies in Georgia, the user should be directed to them.

Users could communicate their needs to developers through their curriculum directors, by participating in workshops and education classes, by participating in professional meetings and symposia and, perhaps, through discussions with publishers' representatives. Perhaps one of the best means of communication, however, is to cooperate with developers in testing of innovative products when the opportunity arises. Both users and developers need to stress the importance of feedback in developing successful innovative products. Communication would be more effective if users could state their problems in more precise terms than, for example, "the children can't read." Developers, on the other hand, should

be prepared to probe into such generalizations to obtain specific statements and sample cases supporting them.

It is both important and possible for users to be involved in development of innovative products, but such involvement is not easy for either the developer or the user. Both participants must be flexible. The user must not be defensive; he must be willing to cooperate with the developer and this may require him to be more research-oriented and research-knowledgeable. The developer must be willing to help the user build these characteristics and he should avoid arousing the user's defense mechanisms. We have found that successful cooperation between user and developer depends most of all on two factors--keeping the user informed of the developer's goals and activities and letting the user know his activities and the feedback he provides are an essential part of product development.

Maladoption and/or poor use of innovation is common. Our experience indicates that misuse of an innovative product is more often the case than not. A common cause of misuse is that the product is selected to meet a need for which it was not designed. We also find many users who believe that no product marketed commercially could be entirely suitable so they adapt the product "to meet local needs." In other cases, the product is adopted by administrators and the actual users may have little interest in using it correctly, little faith in its effectiveness and no preparation for using it as it was designed. Occasionally the actual user resents adoption of the product, interpreting it as a poor reflection on his own abilities and methods. He may conciously or unconciously sabotage implementation of the product.

The persons actually responsible for implementing an innovative product should, if at all possible, participate in the decision to accept it. At least these persons should be assisted in implementing the product--they must know what they are to do and why. Our experience suggests that there is an inverse relationship between the amount of preparation the user receives and the amount

of translation, transformation and/or adaptation of our product.

Trends in education do have an effect on diffusion. Certainly products based on the open classroom concept, the middle school concept, the activity learning concept or on the behavioral objective concept are more popular than products based on, for example, the self-contained classroom concept. But there is often a time lag between the period in which a trend is popular among developers and the period in which a trend becomes popular among users. While elementary school mathematics curriculum guides and textbooks supposedly based on sets of behavioral objectives are just coming into widespread use, mathematics educators are beginning to debate the usefulness and the possible harmful effects of using behavioral objectives in planning for instruction. As another example, teaching machines lost popularity among product developers years ago but a local school system near our project office bought two expensive models just last year.

While discussing trends in education, we should remind ourselves that there is a tremendous bandwagon effect among both developers and users. At various times during the last decade or so, programed learning, discovery learning, activity learning and the open classroom concept (to name a few) reached such peaks of popularity as to lead an outside observer to think that the then-current trend was so important and so effective that it would revolutionize education in American schools. If both developers and users would demand research studies of innovative products, the bandwagon effect might be decreased or eliminated and the usefulness of innovative products would increase.

Users probably have no systematic means for locating resourses. Their procedures are likely to depend on their previous experiences in seeking help so they turn to curriculum directors, university teachers, professional meetings, books or whatever has provided assistance in a non-threateping manner before. Journal articles, "gadget" catalogues and other mediated communications are perhaps the least likely source of assistance.

The decisions the users make about innovative products located through these sources will depend on their perceptions of needs in the school system. Obviously, a product will not be accepted unless it fits the need as it is perceived by the user. A user may accept a product simply because "I just like it" but he may also consider per-pupil cost, the amount of use the product is likely to have (is it usable for the whole year or just one unit?), the amount of preparation required of the user and its appeal to the students. If an indirect user were making the decision, the factors other than cost could be political or concerned with the relationship of the product to currently-popular concepts the school system has identified with (open classroom, etc).

Although it seems more likely that a developer must create a market for his product than for a user to initiate the developer's activity, our product exists because of the expressed needs of users. Now that our product is available and has been proved effective, we are creating a larger market for it. There are several factors involved in creating a market. The most important is to help the potential user perceive the need that we have been shown does exist. Next we must prove to the user's satisfaction that our product satisfies the perceived need. Third, we must prove to the user's satisfaction that implementation of the product is within the limitations of his budget and physical facilities. Fourth, through training and other kinds of technical assistance we attempt to insure successful implementation and minimal misuse of the product.

There are several qualities of our product which enhance its saleability--it has a low per-pupil cost, it does not require elaborate physical facilities, it does not require extensive education or previous work experience for the paraprofessionals who are employed as tutors, it is based on extensive research and it has been proved effective in terms of childrens' achievement. Further, the instructional method employed--programed tutoring--provides active learning based on a discovery model, and instruction is individualized.

Our search of the literature in regard to products similar to our own (i.e. tutorial systems) indicates that very few products have any research connected with them in either the development or implementation stages. Apparently most products are based on theory or previous practice and evaluation, if any, is negligible and highly subjective.

There seem to be six major factors that have influenced dissemination of our product. First, there is valid data available which show that the product is effective. Second, the product is research-based but also incorporates some currently-popular classroom practices. Third, federal funds have been available to facilitate implementation of the product. Fourth, our product can be correlated with each of several popular basal series. Fifth, the product can be implemented at low cost. The sixth factor might be described as "fullness of time;" that is, we began dissemination activities at a time when several favorable conditions existed. Chief among these were the accepted use of paraprofessionals in the schools and the availability of federal funds for purchasing tutoring kits and hiring paraprofessional tutors.

6.0 General Observations.

6.1 At what point should a developer of curriculum materials begin his dissemination activities.

Actual dissemination activities do not need to be entered early, but dissemination oriented issues need to be considered from the very beginning of a development project. For instance, a curriculum which requires a teacher to use complicated teaching strategies is less likely to be used in an appropriate manner than is a curriculum which has simpler teaching strategies. As a result, the developer needs to weigh the use of these complicated strategies against his desire to have his curriculum taught appropriately. Often such a dilemma is never conscious considered, or it is considered after the fact.

6.3 How could users more effectively let developers know of their needs?

I do not think that this question is as important as is the issue of how developers cope with the great variety of user needs.

6.4 How can teachers (the users) be involved in the development of new products and ideas? Is it important? Is it possible?

I believe that teachers have a limited but important role to play in the development of new products. Teachers, in my experiences, are not good creators of materials, particularly when the materials are to be used by other people. Teachers can, however, play an important role by reacting to the ideas and materials of developers. I would like to see more field testing of initial drafts of materials by teachers not closely connected to a development project; too often the field testing of materials is done by the development staff or by teachers who have essentially become part of the development staff. To wait until the final stages of field testing to use "outside" teachers is to guarantee that these teachers will have little impact on the shape of the materials.

6.5 To poor use of innovations research

...ue, particularly when an innovation calls for a type of behavior... Inquiry teaching, which is not familiar to most teachers. When more trouble than the misuse of innovations is present lack of awareness of role mismatch under such condition there is little hope of self-correction. When I was working with a group of teachers interested in the Improved Social Studies Materials, I found that several of the teachers could not themselves make the distinctions among factual, definitional, and value claims which the teachers were supposed to help the students make.

6.7 To what extent is there translation, transformation, and adaptation of innovation during the diffusion process?

My experience in a three year social studeis diffusion project supports such adaptation is extensive, probably considerably more than the typical developer would like to see. In addition, teachers often make their changes on the basis of pedagogical considerations which may do violence to materials which were sequenced on a different basis. Any set of materials which cannot withstand extensive alteration ought not to be put into the school market.

6.10 How do users make decisions about their needs with respect to new educational products?

I have just finished writing an article about how a group of social studies teachers selected among the national project curricula and implemented their choices. Very few analyses exist of exactly how teachers and other school personnel choose to use a new product.

6.14 From your past experience, what do you consider the major factors influencing diffusion of innovation in education?

Advocacy of an innovation by someone in the recipient organization.

6. GENERAL OBSERVATIONS: DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT THE SCOPE AND NATURE OF DIFFUSION (DISSEMINATION AND IMPLEMENTATION) THAT WOULD BE USEFUL TO PERSONS WHO ARE DEVELOPERS OR TEACHERS AND WHO PARTICIPATE IN EITHER DISSEMINATION OR IMPLEMENTATION ACTIVITIES, OR BOTH?

The point at which a developer of curriculum materials begins his diffusion activities has to be directly related to the field in which he is working. He certainly must have interaction with the classroom user of his product to keep himself within the realm of reality. Very early in the planning stages there should be a direct connection between the classroom teacher and his students and the developer of the curriculum materials. Since it is well known that sources of financial aid can greatly influence whether something is implemented or not, those that would be in a position to give financial support for the implementation of a product should certainly be appraised of what the developer is undertaking from the beginning. The developers should not be bashful if they know they have a potentially good product and if they know that what they are doing can be effective in helping students learn. Support organizations such as the U.S. Office of Education, the National Institute of Education, the National Science Foundation, private funding groups, the state departments of education and commercial interests should be considered.

As one works as a consultant to school districts, he certainly needs to know numerous sources of information for his particular field. In the case of science and mathematics one would turn to the institutions which have been actively involved in disseminating information, such as The International Clearinghouse on Science and Mathematics Curricular Developments at the University of Maryland, the ERIC Clearinghouse on Science, Mathematics and Environmental Education at Ohio State University, the U.S. Office of Education, the National Science Foundation, the National Academy of Science and the professional organizations such as the National Science Teachers Association, the National Association of Biology Teachers, the American Association of Physics Teachers, the Division of Chemical Education of the American Chemical Society, the American Association for the Advancement of Science, the National Association of Geology Teachers, The National Association

for Research in Science Teaching and the National Council of Teachers of Mathematics. With all of these one would certainly want them to know about the various journals and special publications of these organizations as well as their other informational activities including their annual convention programs. If one is interested in developments outside the United States (and in this day and age he certainly should be), then he would want to know about associations in other countries of the world and for instance, would want to know about the International Council of Associations for Science Education (ICASE) which was recently formed and is about to develop its own publications. Certainly the work of such internationally oriented bodies as UNESCO and ICSU in Paris and CEDO in London should be noted.

To allow developers to more effectively know of users needs certain kinds of communications channels can be set up. For instance through the International Clearinghouse on Science and Mathematics the users very frequently are put in touch with the developers simply by the normal day-by-day communications associated with the question and answer channels employed. Most commonly materials of just the appropriate nature is being produced but users simply haven't yet heard about it.Many times the wheel is re-invented, which for professional growth of individuals is not always bad.

Improper adoption of innovations may not be common but it certainly does exist. When persons say they are using a particular curriculum project it may be that they are using parts of it but don't really understand the philosophy behind the original idea. It is crucial that developers do become involved the actual implementation work so that the original ideas behind their development do get put into practice in the classroom if they are truly valuable.

It appears, unfortunately, that in educational research there still is little direct benefit influence from the theoretical activities that go on and the practical realities of the classroom. As the immediate past president of the National Association for Research in Science Teaching, I have become even more aware and

concerned about how little use is ever made of research that goes on in graduate schools of education into the classrooms where the action is. Many researchers really do want to help and desire to bring about more efficient learning with students but realize with their limited time and funds are just scratching the surface. National programs should be developed to help support more practical applications of national educational research and funds from the National Science Foundation as well as the National Institute of Education might be considered for doing this kind of innovation rather than supporting some other kinds of things presently being supported. This might be of more concrete effect than other ventures. Just the further training if professional educators as to what is now going on in the fields research-wise could be valuable.

Major groups that need to get themselves more involved in innovation diffusion are the basic funding agencies including the National Science Foundation, the U. S. Office of Education, the National Institute of Education and the publishers who have done the original production of much of this material. Any time persons or groups have put large amounts of funds or time into a product they most assuredly should want to see that other persons know about it. They have a major responsibility in the dissemination of information on their particular topics and ought to concentrate on this as well as on implementation, after evaluation. As important, but maybe to a lesser extent are the roles of the professional organizations and the teachers and administrators who actually have gotten involved in developing and implementating the products. They need considerable help and encouragement if they are to effectively continue diffusion activities. This is no time for cut-backs in educational funds that are contributing to better education for our nation's students.

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6.0 General Observations: Do you have some general observations about the whole process of diffusion (dissemination and implementation) that would be useful to others who are developers or users and who participate in either dissemination or implementation activities, or both?

Curriculum changes in schools are typically stimulated by a "crisis", usually originating outside the school (a technical manpower shortage, career education, improving "the quality of life", the ecological catastrophe or will mankind survive?) and followed by a "crash" program. Fundamental questions are seldom asked. A decade was devoted to seeking "innovations", now we seek "alternatives". Yesterday, we sought to "personalize" teaching, today we try to "socialize" it -- or should we do both? Slogans become two-word philosophies without meaning, such as, "process education", "discovery learning", "multi-cultural teaching", "human potential." The labels are changed on existing practices or a new product with the "correct" label is adopted and things go on as before.

My career in education extends from the 32 mm silent film through sound and color addition, to 16 mm, then to 8 mm, and is now on the rise with the super 8 mm film. First there were records, then tape records, now cassettes; only the voice

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of the teacher remains constant. The diffusion of educational technology is easy compared to using technology to improve education. The use of technology in schools is about at the level of the farmer who paints the chicken coop to improve the egg laying quality of the hens.

When a new curriculum is found to be acceptable to a school the tendency is to adopt the subject matter and neglect the rationale, goals and essential teaching style that gives it meaning and significance. Here the developers are at fault because they seek to "sell" a curriculum product rather than a potentially better education for young people. Teacher educators are at fault because they think only about training teachers, providing them with a few techniques and purportedly classroom survival skills rather than educating for professional competence. There is a general over-emphasis upon the how of teaching and a neglect of the why. Educational research is not of much help to schools or developers because it is either a-theoretical, or fails to deal with the "needs" of schools, or lacks focus. Without some beliefs and a few commitments about what is worth knowing, there is no real basis for making educational decisions, locating needs, or seeking ways to improve what already exists.

Current pressures on teachers and administrators to force them to establish performance criteria and list behavioral objectives is at least creating an awareness about

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what schools ought to be doing. But as one reviews the lists of behavioral objectives teachers write for the sciences, one observes that they are programming the curriculum and instruction back to where it was in the 1940's and early 1950's. (Of course, a staff can avoid any thinking about its objectives and buy a set from one of the commercial agencies or compile a list from what other schools have written.)

It's my impression that teachers and school administrators more often than not are unaware of the fundamental problems within their schools, and that expressed "needs" arise from outside of the schools. A court decision, a rash of books critical of education, public pressure, an administrator seeking publicity, a desire to get additional funds and so on, seem to be the major source of "needs". As a curriculum consultant I have rarely been asked such questions as how to provide a better learning environment, or how to go about improving the learning of concepts, or how to develop thinking skills, or how to construct tests compatible with goals. Teachers want answers to questions: "Which is the 'best' elementary school science series?" "Which is the most widely used of the BSCS biology versions?" "Would you buy this or that film series?"--none of this "theory stuff" about children, society, life and values. A British Middle Years Science Project (Science 5/13) introduces the program with a continuing study of educational objectives (With Objectives in Mind). The assumption is that

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if the objectives are appreciated the teacher will be capable of adapting and expanding suggested items for a curriculum. A common weakness of most educational product developers has been their inability to convey in any meaningful way its objectives. Usually the objectives are described, often in inspiring ways, by the creators of the programs, but the adopters end with the product, not the inspiration.

If we assume that new products are essential to improving the effectiveness of American education, then we must seek to institutionalize "change for progress in the schools." It will also be necessary to modify the pre-service education of teachers, including subject field as well as professional work. One of the major drags on effective teacher education today is found in the departments of arts and sciences of the colleges and universities. The emerging trend, for example, in the pre-college teaching of science is toward an integrative (trans-disciplinary) approach. But courses for preparing teachers of science are discipline bound and the goal is specialization; they have never been oriented toward general education. The preservice professional education of teachers is also in need of change if it is to act as the first link, which I feel it must, in the dissemination and implementation of new ideas and products. When new products are to be implemented, the largest per cent of teachers that will be involved are those already in the schools and the mechanisms for dissemination will

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necessarily differ. We should expect, however, that beginning teachers entering the schools will bring new ideas with them to help trigger the change process.

Most efforts for the diffusion of an educational product are piecemeal and target oriented rather than dealing with the problem in the sense of the interactions of a complex ecological system. It is my experience that directed change in schools is expected to occur too fast and that adoption is confused with implementation. My guess is that an effective program of diffusion for a new curriculum or a change in teaching style is an evolutionary process and that mutations should not be expected. Time cycles of three to five years are minimal for assuring progress on the diffusion of a significant educational product. Finally, I feel we need a new breed of person, an educational engineer of some sort in the schools. His responsibilities would be more in the nature of a "problem finder" and "problem analyzer" than simply a "change agent" or "curriculum director" in the way the holders of these positions now function. He would serve more as an evaluator within the school system, providing the feedback essential for directed change as well as isolating the educational problems within the schools.

6.0 General Observations -

A developer should begin diffusion activities from the beginning. People who received early occasional papers on the development of American Political Behavior were eager to pilot it. Teachers who had used the experimental version told others of their experience and positive attitudes. By the time APB was available for purchase there were many people who were eager to adopt it because trials in their area by people they knew had been successful.

As a consultant to school districts I encourage departments to join NCSS, state and local councils, read the publications of those organizations and attend their meetings when possible. Journal articles and advertisements and convention sessions and exhibits are excellent sources of information about innovations. I also suggest they identify people and curriculum material libraries in the state department of education, in nearby universities and in large school districts in their state that might be helpful resources. For particular courses they teach, I suggest they subscribe to newsletters and make contact with appropriate organizations, like the African-American Institute and the Council for Economic Education.

There seem to be neither norms nor channels by which users

for developers know of their needs. Recently, when I have heard teachers complain that program did not have adequate teachers guides, I have asked them, if they had told the developers of their concern. They replied that they did not know how to, other than to write a letter which they felt had no effect. As a consultant, I was not sure that my suggestions had any effect either. Daily, salespeople and I heard requests for a slow learner version of the material. I passed that on to the developers and to the publisher but do not know if such a program will be developed. Teachers who pilot early versions of a course should offer suggestions for improving programs before they are complete.

Maladoption has taken place in many places where new social studies materials are used but teachers have neither the skills nor the attitudes necessary for facilitating inquiry learning.

Trends in education have strong effects on the diffusion of innovations. Inquiry and behavioral objectives were "in", so people were extremely receptive to programs, like APB, that seemed to have those features.

Users of curriculum materials seek consultative help from supervisors and visitors who seem to know about innovative programs. Members of the Social Studies Diffusion Project, the Coordinator for School Social Studies and I, as the link to field agent schools, are often asked for suggestions while we are making

school visits.

Users seem to ask "is this program compatible with my needs and values and is it the best among alternatives?"

The major factors influencing diffusion are:

1) Are clients tied into the communication network so that they can receive messages about innovations?
2) Is the innovation perceived by the potential adopter as compatible with his or her needs and values?
3) Does the school provide the necessary supports for innovation and does it have the capacity for continual self-renewal?

As a demonstration teacher-consultant with a particular new social studies program, I learned the following:

1) Find out as much as possible about the local culture and needs before suggesting particular programs.
2) If one is going to make a presentation to a group it is important that the light and heat be comfortable, that there are no distractions, and that some refreshment be provided. People are more receptive to messages when they are comfortable, awake, and not distracted.
3) Demonstration lessons by an outsider usually hurt more than they help. The class is never perceived as "typical" by the observers, and teachers tend to be extremely critical of others who try to show them how to teach.

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6.1 At what point should a developer of curriculum materials begin his diffusion activities?

The general rule that I would endorse is for the developers to be involved in diffusion activities as soon as possible. I cite the extensive experimental use of the Senesh economic education materials as an example of a project that received quite high visibility in its relatively early stages so that it was fairly widely known by the time it was made available commercially. But in order not to make this generalization a categorical one, I can also cite the case of another project in which early diffusion tended to create some negative reactions which persisted even though the materials where changed substantially in the commercially available editions. The specific project I refer to is the Greater Cleveland Social Studies project--particularly the materials prepared for the middle grades. Teachers in one school system reviewed some of the preliminary versions and were so unimpressed that they didn't even consider the commercial versions.

6.2 If you were called in as a consultant to a school district, where would you tell them to turn for resource information?

Having been in this position several times I can still give no categorical response. Probably the most frequently used source of information is the professional literature, particularly Social Education. This serves the prospective innovator as a general introduction to the kinds of new materials available. Not the least of these sources of information are the advertisements carried in this and other professional journals. When these ads are properly discounted for their commercial hyperbole, they can provide a useful source of information to the innovatively mind educators. Another obvious source, once the preliminary screening has been done, is to contact the persons directly responsible for a given curriculum project or program.

6.3 How could users more effecitvely let developers know of their needs?

This is extremely difficult. There is no systematic feedback network by which users can let the developers know of their needs, and even if there were there

is no assurance that the developers would be getting a truly representative sample among the users. Furthermore, the needs of the users may be strongly conditioned by local factors that are not generally applicable to the entire population. Given all of these constraints, I see as probably the most effective means of feedback the written and oral communications from users to developers by informal media and the more traditional media such as professional literature or professional meetings.

6.4 How can teachers (the users) be involved in the development of new products and ideas? Is it important? Is it possible?

Pretty much the same constraints as listed above also apply here. Yes, it is moderately important but not imperative. Yes, it is potentially possible but not very likely. On a more positive note, teachers and users can get their inputs into the development process by deliberately being part of the development team. In almost all of the new curriculum projects this has been done to some extent.

6.5 Is maladoption of innovations common?

Yes, unfortunately. A specific instance that I had occasion to observe in the classroom occurred in an elementary school in Honduras, Central America. In this case a teacher was ostensibly using the Taba program but unfortunately she had little or no grasp of the rationale behind it. For example, when questioned about the underlying generalization that was to emerge from the particular unit of work she was on, she not only could not identify the generalization but didn't even understand the question.

6.6 Is poor use of innovations common?

Also yes, unfortunately. A specific example of this occurred when I visited a high school teacher who was using a new social studies textbook that dealt with problem solving in its first chapter. The problem solving method was to be used in the subsequent chapters of the book. When he told me about the students' approach to chapter 15, it was one of pure exposition and rote retention. I asked if he had dealt with chapter one. His response was "Yes, we did, but we are through with it now and into the other chapters."

6.7 To what extent is there translation, transformation, and adaptation of innovation during the diffusion process?

An unexpected example of transformation and adaptation has occurred in my own methods class with respect to the use of the SRSS episode on Testing for Truth: A Study of Hypothesis Evaluating. This booklet was originally prepared for secondary school use. At first my intention in using it in my methods course was simply to illustrate one of the products generated by a curriculum project. After using it in several different classes I began to see that it not only met the purpose of illustrating new materials but also gave the students an opportunity to apply their previously acquired theoretical information about social science research in a practical and understandable laboratory experience.

6.8 What effect do trends in education have upon the diffusion of educational products?

No data available.

6.9 Whom do users of curriculum materials look to for consultative help when they feel they need new products for the classroom?

Speaking only from my experience as a university consultant, I can attest to the fact that users do indeed seek our consultative assistance. There has never been a school year during which I have not had several such requests for help. Even as I am writing the responses to these questions, I am hastily putting materials together prior to my departure in two days to meet with a social studies curriculum team in another state. My informal assessment as to why university personnel are consulted is that they have no academic or personal axe to grind within the school district to which they are invited. In addition to acting as diffusers of new ideas they can also play the role of impartial mediators or even arbitrators when various factions within a school district are unable to agree on given curriculum choices.

6.(10) How do users make decisions about their needs with respect to new educational products?

No firm data available.

6.(11) How do users find resources to help solve their needs?

No firm data available but the response to 6.9 above is somewhat relevant here.

6.(12) To what extent do developers create products for their audiences as opposed to responding to demand initiated by the consumer?

My impression is that developers do more creating than responding to demands. Even the theory or stimulation comes from the educational landscape. The initial impetus to these innovations did not come from the eventual users.

6.(13) To what extent does research influence the development of products?

My response to this question will necessitate a division of the innovation process into the development and the diffusion phases. Research does indeed influence the development of products. I cite the years of research which strongly endorsed the inquiry approach to learning as a significant factor influencing many of the new curriculum projects. Unfortunately our research on the diffusion process is so limited and inconclusive that I fear it has had little effect on the diffusion of developed products.

6.(14) From your past experience, what do you consider the major factors influencing diffusion (dissemination/implementation) of innovation in education?

I would list the following factors in order of importance:

(a) The professional competence of the education personnel involved in the total diffusion process. Without a high degree of this kind of competence a project has serious difficulty in either getting off the ground or getting disseminated. This professional competence is needed at all levels--administrators, curriculum directors, teachers, and influencial lay personnel (such as school board members).

(b) Financial support. Here I cite the tremendous boost to the development and diffusion of curricular materials in the 1960's stemming largely from the massive Federal support provided through Project Social Studies of the U.S. Office of Education and related funding agencies.

(c) An adequate back-log of promising new ideas is imperative. These are the kinds of ideas that appear to be theoretically sound but need to be

6.1 At what point should a developer of curriculum materials begin his diffusion activities?

Even as he plans the initial design, content, methods, etc., a developer should have diffusion in mind.

6.2 If you were called in as a consultant to a school district, where would you tell them to turn for resource information?

I tell them to contact the SEC and ERIC/ChESS.

6.3 How could users more effectively let developers know of their needs?

Through professional associations like NCSS.

6.4 How can teachers (the users) be involved in the development of new products and ideas? Is it important? Is it possible?

It is important and it is possible to involve teachers in the development of new ideas and products. They can be involved from the start by being an integral part of the staff of the project. This is the philosophy and practice of the Schools Council in England.

6.5 Is maladoption of innovations common?

Not necessarily common, but certainly possible.

6.6 Is poor use of innovations common?

Again, not common, but certainly in practice in some schools.

6.7 To what extent is there translation, transformation, and adaption of innovation during the diffusion process?

Here, I think to a great degree there is transformation of products and projects. I saw this all over England in the use of Man: A Course of Study.

6.8 What effect do trends in education have upon the diffusion of educational products?

Especially currently with so many budget cuts, trends have much impact on diffusion.

6.9 When do users of curriculum materials (say, at the conservative end) when they feel they need new products for their pupils?

They look to curriculum co-ordinators of school districts, occasionally to college of education faculty, special groups (like SSSP and NCSS).

6.(10) How do users of curriculum materials make decisions about their needs with respect to new educational products?

From needs arising from classroom experience, from situations in their classrooms or sometimes in the school or community.

6.(11) How do users find resources to help solve their needs?

This is rather ambiguous? Financial? Other?

6.(12) To what extent do developers create markets for their products as opposed to responding to a demand initiated by the consumer?

I don't really know.

6.(13) To what extent does research influence the development of products?

In general design and rationale such as impact of Bloom's taxonomy, behavioral objectives, etc. In availability of media, hardware and software--cassette tape recorders, et al.

6.(14) From your past experience, what do you consider the major factors influencing diffusion of innovation in education?

Major factors influencing diffusion are:

1) financial support by federal sources such as the NSF, USOE, etc.

2) attitudes toward educational change in the broader community such as Sputnick, the focus on the British Primary School methods and the "integrated day," popularized by the press.

3) teacher and administrator attitudes toward the need for change.

6.0

GENERAL OBSERVATIONS: DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT THE WHOLE PROCESS OF DIFFUSION (DISSEMINATION AND IMPLEMENTATION) THAT WOULD BE USEFUL TO OTHERS WHO ARE DEVELOPERS OF USERS AND WHO PARTICIPATE IN EITHER DISSEMINATION OR IMPLEMENTATION ACTIVITIES, OR BOTH?

(since the question asks me if I have general observations, I will respond to the 14 items through the perspective of the MINNEMAST PROJECT implementation director - a role which I played for 8 years)

6.1 At what point should a developer of curriculum materials begin his diffusion activities. Just as soon as tested materials are available.

6.2 If you were called in as a consultant to a school district, where would you tell them to turn for resource information?
1. A list of knowledgeable people in the local area.
2. An EVALUATED document, which describes the program.

6.3 How could users more effectively let developers know of their needs? This is a complex question because, from my experience, needs vary considerably and the realities of production are that the program has a single format. Initial testing of materials by teachers selected to represent an acceptable stratified sample seems to be one way to anticipate and meet common needs.

6.4 How can teachers (the users) be involved in the development of new products and ideas? Is it important? Is it possible?
The MINNEMAST Proposal included the use of a dozen Class A test centers. Teachers from these centers were invited to join the Minnemast Project and were assigned to writing teams. Some teachers, most effective in the classroom, and most sensitive in providing feedback were unable to author useful materials. At the same time, a few teachers turned out to be extremely good authors and made major original or revision contributions.

6.5 Is maladoption of innovations common? Not as much as the writers who at one time argued for "teacher-proof" materials would have one believe. It has been my experience that teachers who are competent, have some knowledge of the curriculum field, and who have some initial in-service help do a remarkably good job with innovative materials. The teacher who is likely to mal-use new materials is probably the one who mal-uses everything else also.

6.6 Is poor use of innovations common? In some respects yes. Teachers and schools have an unfortunate predelection to pick and choose from materials - looking (for example) for everything they can find on tadpoles (or any other topic) and indiscriminately combining pieces from various sources into "our school's tadpole unit." In general, ESS, because of the discrete unit nature of the product has suffered least.

6.7 To what extent is there translation, transformation, and adaptation of innovation during the diffusion process? I believe, even though no two teachers handle a lesson in the same way, that teachers do understand the materials, do transmit the ideas and concepts, and do apply sound methodologies. In this respect, I see t, t and a a strength and not a concern.

6.8 What effect do trends in education have upon the diffusion of educational products? The effects are slow in taking place but are pronounced. The present shift from the somewhat "rigorous" approach of the '60' to the variety of approaches in existance today (many designed to fit organizational variations) has made the K-6 curriculum approach more difficult to use and hence has not been supportive to their adoption in entirity.

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6.9 Whom do users of curriculum materials look to for consultative help when they feel they need new products for the classroom?
1. local consultants
2. knowledgable teachers within the system
3. curriculum-wise administrators
4. practicing teachers in other systems
5. school supervisors and specialists

6.10 How do users make decisions about their needs with respect to new educational products? In watching teacher groups in action, I believe that the materials must meet certain teacher-inherent (but rarely spelled out) criteria. I believe these include:
1. Familiar touch-points. Are there some lessons that I know how to do?
2. Interesting and appropriately written material. It must be interesting to the teacher and where student materials are involved, written appropriately for the child.
3. Supportive materials - particularly AV support.
4. Colorful, well illustrated materials.

It should be noted that the process of decision varies from school to school. The processes are many and varied, they range from state or administration imposed decisions, to school-wide committee decisions, to in-school committee decision, to individual teacher decision.

6.11 How do users find resources to help solve their needs?
They ask:
the next door teacher
their principal
the school science committee chairman
occasionally an ex-professor
and very occasionally, they write to the project.

6.12 To what extent to developers create markets for their products as opposed to responding to the demand initiated by the end user?
In actuality, 10% create the market, 10-% respond to demands.

6.13 To what extent does research influence the development of products?
To a major extent. There are notable exceptions to this where academicians develop materials which are appropriate to the discipline but inappropriate to the school, teacher and youngster. Such programs have a remarkably short life.

6.14 From your past experience, what do you consider the major factors influencing diffusion (dissemination/implementation) of innovation in education?
What others are doing.
Timeliness of the product
The total effort put into dissemination/implementation.

6.15 Others. I believe rather firmly that the strength and flexibility of this nation lies in the diverse educations of the population. For this reason, I feel that several sound curriculum products, used to a lesser extent are far more valuable to the nation than a single program that "shatters all sales records." The young people of the country are, indeed, a captive audience, and it seems more important to me to offer them a wide variety of good programs from which to choose. Indeed, curriculum products that have any merit whatsoever will be used. Moreover, nothing would be more defeating to innovative efforts in the long run than then a "super-nova" which drives all other efforts out of the market place.

6. "CHARACTERISTICS OF SECONDARY SOCIAL STUDIES TEACHERS WHO DEAL WITH SOCIAL ISSUES IN THEIR CLASSROOMS"

A study by Richard Knight (Ph.D. dissertation at Michigan, 1971)

Teachers reported three factors as the most effective in stimulating teachers to try . Summer workshops, new materials, and sharing practices were rated the most effective.

Shaver points out however that he knows of no research evidence to prove that in-service training helps teacher effectiveness in implementing designed curriculum. It would be interesting to hear what Peter Dow's evidence is. His main point is that most institutes are attended by volunteers. The non-volunteers teachers are likely the large majority. If one holds workshops with people who want to innovate or implement their desire is likely as much the causitive force as the workshop.

Shaver feels that most of the information on dissemination is too subjective to be trusted. (Mainly the kind of statements I've made here.)

TABLE 35

Tabulation and Chi-square Analysis of

Most Effective Ways to get Other Teachers to Use

Controversial Issues

Item	Groups Hi SI	Lo SI	Total N	Chi
a. New materials for students which contain more issues	46%	45%	47	.09
b. Summer workshops to develop new methods and materials	50	40	47	.79
c. Special lecturers in faculty meetings	7	5	47	.07
d. Making more current affairs magazines and materials available to teachers	7	10	47	.16
e. Encouragement by principal or other administrators	14	25	47	.48
f. More sharing of teaching practices among teachers in your school	46	45	47	.09
g. Participation in university sponsored projects	18	5	47	1.16
h. Professional conferences and journals	7	5	47	.08

6.0 General Observation: Do you have some general observations about the whole process of diffusion (dissemination and implementation) that would be useful to others who are developers or users and who participate in either dissemination or implementation activities or both?

6.1 Most potential users in the field had much criticism of the developers of the New Social Studies projects because of their unwillingness early on in the projects to share ideas and crude products. This was not true of the Carnegie-Mellon University/Holt, Rinehart and Winston project, and this may have contributed to its widespread use. In general, I feel a curriculum developer should begin his diffusion activities as early in the developmental process as possible (e.g. early position papers).

6.2 Since my field is social science education, I would advise the consultant to look to Social Education (NCSS), Databook (SSEC, Inc.)., State Department of Education Directories of New Social Studies projects, local curriculum Materials collections where available, names and addresses of project directors with whom I am familiar, and local publishers' representatives and other local leaders in social studies education with whom I am familiar.

6.3

6.4 There are several roles teachers can play in curriculum development: 1) as members of small scholar/teacher unit development teams, 2) as official project field-test teachers, 3) as unofficial field-test teachers who volunteer to try out a project's curriculum materials, and 4) as members of field development teams in a decentralized curriculum development project (e.g. Education Development Center's USMES Project).

6.5

6.6

6.7 Teachers typically do not rely entirely on the use the packaged student materials or teachers guides supplied by publishers or projects. The teacher who enjoys using innovative materials inevitably modifies ("pick and chooses") these for his and his students' uses.

6.8 Popularization of innovative products and ideas, with or without evaluative and supportive data, seems to have extensive impact on users on a national basis -- education is fad-prone. Examples here are team teaching, the new mathematics and programmed instruction.

6.9 In my experience, users look to the publishers, to college professors, to the literature, and to their immediate superiors for advice and information on new products or ideas.

6.10 In my experience, users make decisions about adoption or adaption of new educational products on the basis of the following criteria: 1) the ability and power to make a decision, 2) available funds, 3) knowledge about alternatives, and 4) adaptability of the product to local use. Unfortunately, little consideration is given to local piloting and evaluation before adoption or to external evaluations available about the products.

6.11

6.12 It seems to me that in virtually all cases, developers create markets rather than responding to consumer demands.

6.13 In some cases, research has no influence on the development of products. In other cases, highly selected research forms the basis of development. In the cases of the R and D labs, a careful survey of all available research is the basis of development

6.14 I feel the major factors influencing widespread dissemination and implementation of educational innovations are: 1) cost to the user, 2) publishability of the material 3) mediated communications, and 4) interpersonal communications.